Granted pursuant to the First Transitional Law of July 8, 1949
(WiGBL [Economic Law Journal] Page 175)

FEDERAL REPUBLIC OF GERMANY

GRANTED ON
AUGUST 13, 1953

GERMAN PATENT OFFICE

PATENT SPECIFICATION
No. 886 434
CLASS 5b GROUP 12
S7805.VIbJsb

Karl Bechtold, PhD Engineering, Clausthal-Zellerfeld, and
Franz Druckenmüller, Göttingen
are named as inventors.

Siemens-Schuckertwerke Aktiengesellschaft, Berlin and Erlangen

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Hammer Head for Electric Hammer Drills

Patented for the area of the Federal Republic of Germany on May 22, 1943
The period from May 8, 1945, to May 7, 1950 will not be imputed
(Law dated 7/16/51)

Patent application announced on November 20, 1952
Issue of patent announced on July 2, 1953

The invention pertains to a hammer head for electric hammer drills, in which the drill not only performs an axial motion (slugging motion), but also a slow rotary motion (conversion). With this kind of device there is a risk that temporary sticking in the drill hole can lead to the blocking of the conversion action, which can cause breaks. In addition this type of hammer head often has the disadvantage that the tool holder or casing cover is destroyed when the hammer is used without inserting a drill (so-called empty blows). Pursuant to the invention, a cylindrical rubber ring is placed appropriately by force-fitting between the conversion action and the drill case, which on the one hand allows little torsion of the drill onto the conversion action due to its elastic flexibility, and with the full blocking of the drill allows [word illegible] and acts as a safety clutch. In addition the rubber ring forms a buffer for empty blows.

The drawing represents an example of the invention as applied.

1 stands for the drill insertion bush, *2* represents the drill, *3* the hammer casing in which a conversion drive is inserted. The latter includes a driving gear *4*, which engages in the conversion gear casing *5*.

According to the invention the cylindrical rubber ring *6* is inserted between this casing *5* and the drill insertion bushing *1*, which on the outside is with cylindrical segments *7* made of steel, bronze or similar material, inserted by force-fitting . In case of temporary standstill of the drill the elastic flexibility of rubber ring *6* allows small torsions between the drill and the conversion gear without activating the safety clutch. At full standstill of the drill the segments *7* grind against the interior cylinder wall of the conversion gear casing *5*. In addition, in the case of empty blows, the rubber ring *6* absorbs axial blows, which the collar *8* imparts to the rubber ring, which in turn adheres against collar *9* of the segments. This makes it possible to achieve good cushioning for the kind of stress caused by empty blows.

It is recommended that the drill insertion bushing *1* be equipped at the bearing areas of the rubber ring or rubber buffer *6* with a longitudinal groove or with recesses. This makes it possible to achieve good connection between the parts.

The rubber ring or rubber buffer can also be replaced by a spring, in particular a spiral flat spring.

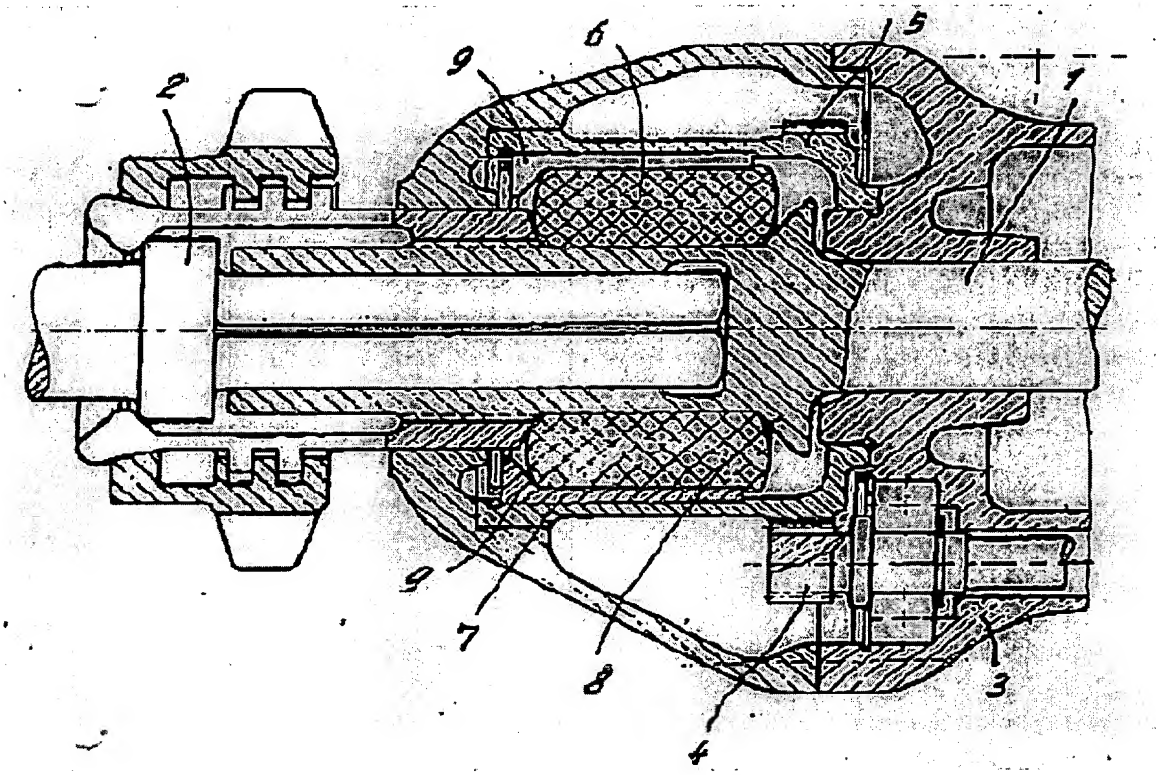
Patent Claims:

1. Hammer head for electric hammer drills with conversion action, characterized by the fact that an elastic rubber buffer (6) is inserted between the conversion action and the drill; [the rubber buffer] absorbs small rotations between drill and conversion action.
2. Hammer head pursuant to Claim 1, characterized by the rubber buffer (6) as pressed-on body of a safety gear for strong torsions between drill and conversion action.
3. Hammer head pursuant to Claim 1, characterized by the fact that the cylindrical rubber ring (6) bears on its exterior surface cylindrical segments (7) made of steel, bronze or similar material guided on the inside along the cylindrical bushing and in case of still stand of the drill gliding along this interior wall.
4. Hammer head pursuant to one of the Claims 1 to 3, characterized by the fact that the cylindrical rubber ring (6) is inserted with initial tension between the interior and exterior contact areas.

5. Hammer head pursuant to one of the Claims 1 to 4, characterized by the fact that the cylindrical rubber ring (6) is connected at its contact areas with the metal parts by vulcanization.
6. Hammer head pursuant to one of the Claims 1 to 5, characterized by the fact that the drill insertion bushing (1) bearing the rubber ring bears on the contact areas of the rubber ring a longitudinal groove or recess.
7. Hammer head pursuant to one of the Claims 1 to 6, characterized by the fact that the rubber ring (6) is clamped in axial direction between two collars or beads.
8. Hammer head pursuant to Claim 1, characterized by the fact that the rubber ring is replaced by a spring, in particular a spiral flat spring.

See enclosed drawings

[Drawing] for Patent Specification 886 434, Class 5b, Group 12



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